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P/N 145795

CAMBRIDGE ELECTRONICS LABORATORIES

BLACK MAGIC TELEPHONE RINGING GENERATOR -- MINI SQUARE WAVE MODEL

OPERATING CHARACTERISTICS

Specification		----Value----		Remark
Input voltage	(V_{dc})	24	48	24 V unit operate: 18-36 V (<24 V with reduced power output) 48 V unit operate: 38-57 V (<48 V with reduced power output) Custom voltages 12-60 available on special order
Idle current	(mA)	<20	<20	
Output voltage	(V_{rms})	-----86-----		Custom voltages available on special order
Output power	(W)	10	14	Intermittent duty
Output frequency	(Hz)	---20±0.5---		Custom frequencies available on special order
Load regulation	(%)	-----±7-----		
Efficiency	(%)	--60 to 80--		Depending on V_{in} and R_{load}
Operating temp.	(° C)	-10-->+70		Wider temperature range available on special order
Storage temp.	(° C)	-10-->+85		
Hi-pot test	(600 V_{ac})	Input --> output Input --> heatsink Output--> heatsink		

NOTES

(1) Output protected against short circuits by internal current limit and against transient overvoltages by internal zener clamp. May require conditioning for highly inductive loads.

(2) D.c. input NOT PROTECTED AGAINST REVERSE POLARITY. To achieve-rated power output may require conditioning of d.c. input; consult CEL.

(3) Output will pass d.c. ring trip bias only when unit is powered.

(4) Pi-form output filters may be employed to shape square wave with any desired cut-off frequency. Refer to CEL's publication *Telecom Design Tricks* and Datasheet "Appropriate Wave-Shaping Filters for Micro and Mini Black Magic Telephone Ringing Generators."

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PHYSICAL CHARACTERISTICS AND MECHANICAL SPECIFICATIONS

==========PHYSICAL CHARACTERISTICS==========

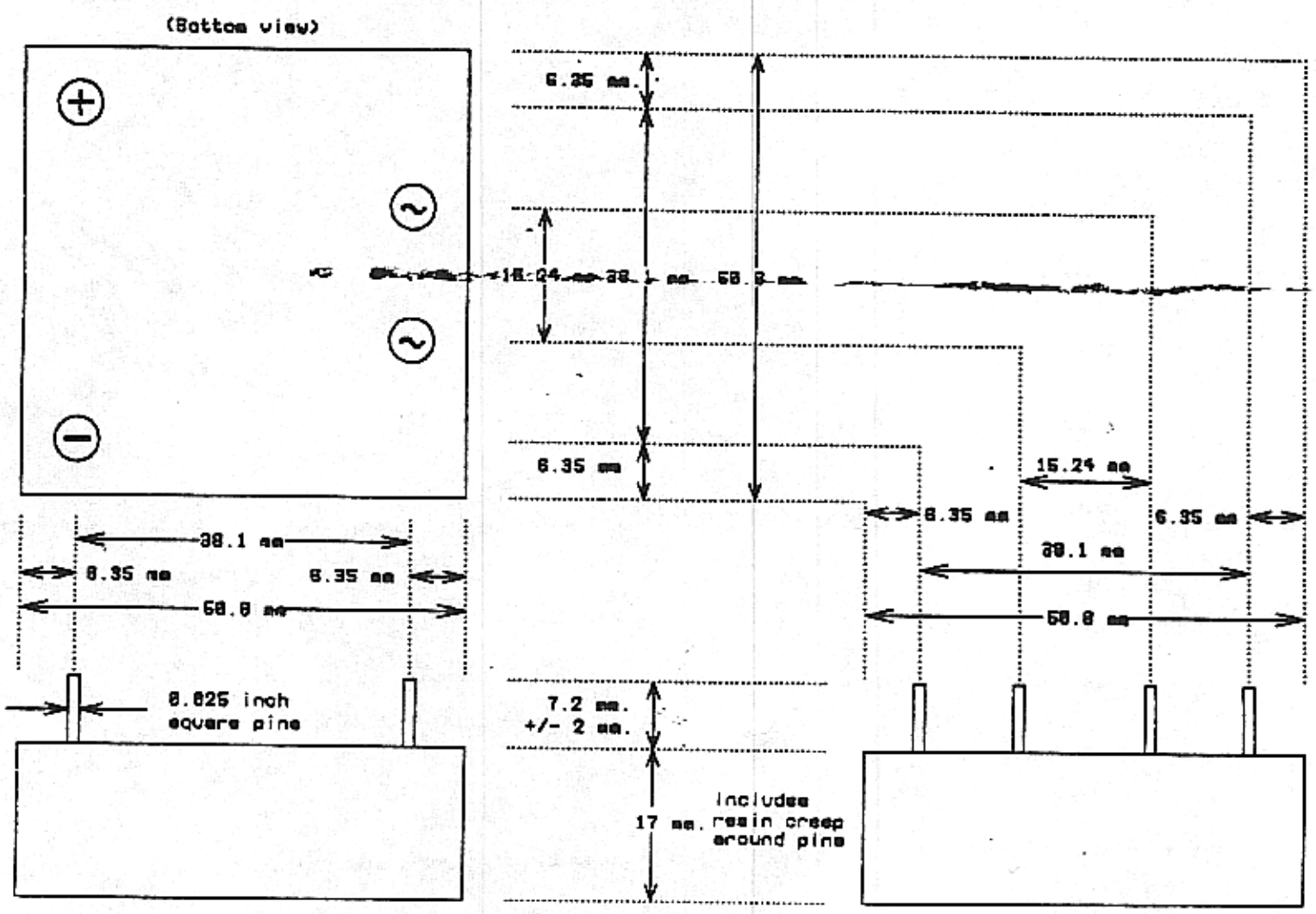
Dimensions mm (in)

Dimensions		
Height	17.0	(0.67)
Width	50.8	(2.00)
Length	50.8	(2.00)

Terminal spacing		
Output	15.24	(0.6)
Input	38.10	(1.5)

Weight: 110 grams (3.9 oz)

==========MECHANICAL SPECIFICATIONS==========



==========CONSTRUCTION AND MOUNTING==========

Black Magic Mini square wave ringing generators are monolithically encapsulated and encased in a five-sided mild steel heatsink with terminals as 0.025 inch square pins. Units are intended for direct solder-down to pcb or they may be socketed with receptacles e.g. from Mill-Max and other vendors.

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